ACETONE

Appendage 031 (NUPLEX INDUSTRIES (AUST))

Chemwatch:	1090	Print Date:	11/10/2013
Version No:	3.1.1.1	Issue Date:	01/01/2013
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements		L.GHS.USA.EN	

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name:	ACETONE
Chemical Name:	acetone
Synonyms:	! 2/2004, 2-propanone, APS RETL00020006 UCH00002546 RDEH06009000, Aceton chemisch zuiver Caldic Nederland, Article No.: 100100, Ashland Acetone ECD Mobil 878033 971934, C3-H6-O, CH3COCH3, EM000739, Epifanes thinner for PP Varnish extra., J.T.Baker Chem-Supply, Product Code: 1.00014, Product Code: 100014, Product number: 00585, RCRA Waste No. U002, RF Services, SPOL00000585 AR0000006 UL0000007 M&B00004946, beta-ketopropane, dimethyl formaldehyde, dimethyl ketone, ketone, dimethyl ketone propane, methyl ketone, propan-2-one, propanone, pyroacetic acid, pyroacetic ether
Proper shipping name:	ACETONE
Chemical formula:	C3H6O
Other means of identification:	Not Available
CAS number:	67-64-1

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:	Solvent for fats, oils, waxes, resins, rubber, plastics, lacquers. Used in manufacture of methyl isobutyl ketone, mesityl oxide, acetic acid, diacetone alcohol, isoprene. Used in solvent extraction processes. Solvent in the manufacture of explosives and rayon.

Details of the supplier of the safety data sheet

Registered company name:	Appendage 031 (NUPLEX INDUSTRIES (AUST))	Huntsman	Gladstone Chemicals
Address:	49-61 Stephen Road Botany 2019 NSW Australia	PO Box 62 Footscray West 3012 VIC Australia	Kororoit Creek Road Altona 3018 VIC Australia
Telephone:	+61 2 9666 0331	+61 3 9316 3333	+61 3 9369 7888
Fax:	+61 2 9700 1066	+61 3 9316 3644	Not Available
Website:	www.nuplex.com.au	Not Available	Not Available
Email:	info@nuplex.com.au	customer_service@huntsman.com	Not Available

Emergency telephone number

Association / Organisation:	Not Available	Not Available	Not Available
Emergency telephone numbers:	Not Available	Not Available	Not Available
Other emergency telephone numbers:	Not Available	Not Available	Not Available

SECTION 2 Hazards identification

Classification of the substance or mixture

GHS Classification[1]:

STOT - SE (Narcosis) Category 3, Aspiration Hazard Category 1, Flammable Liquid Category 2, Eye Irritation Category 2A

Legend:*1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI*

Label elements

GHS label elements

Signal word:	**DANGER**

Hazard statement(s):

H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

Supplementary statement(s):

Not Applicable

Precautionary statement(s): Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash all exposed external body areas thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.

P280	Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement(s): Response	
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P331	Do NOT induce vomiting.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use… to extinguish.
Precautionary statement(s): Storage	
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
Precautionary statement(s): Disposal	
P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration

SECTION 3 Composition / information on ingredients

Substances

CAS No	%[weight]	Name
67-64-1	95-99.5	ACETONE

Mixtures

See section above for composition of Substances

SECTION 4 First aid measures

Description of first aid measures

Eye Contact:

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact:

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation:

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

Ingestion:

- If swallowed do **NOT** induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.
- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For acute or short term repeated exposures to acetone:

- Symptoms of acetone exposure approximate ethanol intoxication.
- About 20% is expired by the lungs and the rest is metabolised. Alveolar air half-life is about 4 hours following two hour inhalation at levels near the Exposure Standard; in overdose, saturable metabolism and limited clearance, prolong the elimination half-life to 25-30 hours.
- There are no known antidotes and treatment should involve the usual methods of decontamination followed by supportive care.

[Ellenhorn and Barceloux: Medical Toxicology]

Management:

Measurement of serum and urine acetone concentrations may be useful to monitor the severity of ingestion or inhalation.

Inhalation Management:

- Maintain a clear airway, give humidified oxygen and ventilate if necessary.
- If respiratory irritation occurs, assess respiratory function and, if necessary, perform chest X-rays to check for chemical pneumonitis.
- Consider the use of steroids to reduce the inflammatory response.
- Treat pulmonary oedema with PEEP or CPAP ventilation.

Dermal Management:

- Remove any remaining contaminated clothing, place in double sealed, clear bags, label and store in secure area away from patients and staff.
- Irrigate with copious amounts of water.
- An emollient may be required.

Eye Management:

- Irrigate thoroughly with running water or saline for 15 minutes.
- Stain with fluorescein and refer to an ophthalmologist if there is any uptake of the stain.

Oral Management:

- No **GASTRIC LAVAGE OR EMETIC**
- Encourage oral fluids.

Systemic Management:

- Monitor blood glucose and arterial pH.
- Ventilate if respiratory depression occurs.
- If patient unconscious, monitor renal function.
- Symptomatic and supportive care.

The Chemical Incident Management Handbook:

Guy's and St. Thomas' Hospital Trust, 2000

BIOLOGICAL EXPOSURE INDEX

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Sampling Time	Index	Comments

Acetone in urine	End of shift	50 mg/L	NS

NS: Non-specific determinant; also observed after exposure to other material

SECTION 5 Firefighting measures

Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility:

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting:

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water course.

Fire/Explosion Hazard:

- Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Minor Spills:

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.

Major Spills:

Chemical Class: ketones

For release onto land: recommended sorbents listed in order of priority.

SORBENT TYPE

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- **DO NOT** allow clothing wet with material to stay in contact with skin

Other information

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- **DO NOT** store in pits, depressions, basements or areas where vapours may be trapped.

Conditions for safe storage, including any incompatibilities

Suitable container:

- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type.

Storage incompatibility:

Acetone:

- may react violently with chloroform, activated charcoal, aliphatic amines, bromine, bromine trifluoride, chlorotriazine, chromic(IV) acid, chromic(VI) acid, chromium trioxide, chromyl chloride, hexachloromelamine, iodine heptafluoride, iodoform, liquid oxygen, nitrosyl chloride, nitrosyl perchlorate, nitryl perchlorate, perchloromelamine, peroxomonosulfuric acid, platinum, potassium tert-butoxide, strong acids, sulfur dichloride, trichloromelamine, xenon tetrafluoride
- reacts violently with bromoform and chloroform in the presence of alkalies or in contact with alkaline surfaces.
- may form unstable and explosive peroxides in contact with strong oxidisers, fluorine, hydrogen peroxide (90%), sodium perchlorate, 2-methyl-1,3-butadiene

Package Material Incompatibilities:

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US ACGIH Threshold Limit Values (TLV)	acetone	Acetone	500 (ppm)	750 (ppm)	Not Available	TLV® Basis: (URT & eye irr; CNS impair; hematologic eff); BEI
US OSHA Permissible Exposure Levels (PELs) - Table Z1	acetone	Acetone	2400 (mgm3) / 1000 (ppm)	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	acetone	Dimethyl ketone, Ketone propane, 2-Propanone	590 (mgm3) / 250 (ppm)	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
acetone	200(ppm)	200(ppm)	3200(ppm)	5700(ppm)

Ingredient	Original IDLH	Revised IDLH
acetone	20,000 / 5,000(ppm)	2,500 [LEL] / 1,500(ppm)

MATERIAL DATA

Odour Threshold Value: 3.6 ppm (detection), 699 ppm (recognition)
NOTE: Detector tubes measuring in excess of 40 ppm, are available.
Exposure at or below the recommended TLV-TWA is thought to protect the worker against mild irritation associated with brief exposures and the bioaccumulation, chronic irritation of the respiratory tract and headaches associated with long-term acetone exposures. The NIOSH REL-TWA is substantially lower and has taken into account slight irritation experienced by volunteer subjects at 300 ppm.

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.

Personal protection

Eye and face protection:

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task.

Skin protection:

See Hand protection below

Hand protection:

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Body protection:

See Other protection below

Other protection:

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.

Thermal hazards:

Recommended material(s):

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
The effect(s) of the following substance(s) are taken into account in the ACETONE

Material	CPI
BUTYL	A
BUTYL/NEOPRENE	A
PE/EVAL/PE	A
PVDC/PE/PVDC	A
SARANEX-23 2-PLY	B
TEFLON	B

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion

Respiratory protection:

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Clear, colourless, highly volatile, highly flammable liquid with characteristic sweet odour; mixes with water. Mixes in alcohol, ether, most hydrocarbons and oils.

Physical state	Liquid	**Relative density (Water = 1)**	Not Available
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	465
pH (as supplied)	Not Available	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	-95.4	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	56	**Molecular weight (g/mol)**	58.08
Flash point (°C)	-17	**Taste**	Not Available
Evaporation rate	11 BuAc=1 VFast	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	12.8	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	2.6	**Volatile Component (%vol)**	100
Vapour pressure (kPa)	Not Available	**Gas group**	IIA
Solubility in water (g/L)	Miscible	**pH as a solution(1%)**	Not Available
Vapour density (Air = 1)	2.0		

SECTION 10 Stability and reactivity

Reactivity:

See section 7

Chemical stability:

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Possibility of hazardous reactions:

See section 7

Conditions to avoid:

See section 7

Incompatible materials:

See section 7

Hazardous decomposition products:

See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled:

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.
Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant number of individuals, following inhalation.

Ingestion:

Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result.
Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis).
Accidental ingestion of the material may be damaging to the health of the individual.

Skin Contact:

Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.
Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.
The material may produce mild skin irritation; limited evidence or practical experience suggests, that the material either:

- produces mild inflammation of the skin in a substantial number of individuals following direct contact, and/or

Eye:

The liquid may produce eye discomfort and is capable of causing temporary impairment of vision and/or transient eye inflammation, ulceration
Evidence exists, or practical experience predicts, that the material may cause severe eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Eye contact may cause significant inflammation with pain. Corneal injury may occur; permanent impairment of vision may result unless treatment is prompt and adequate.

Chronic:

Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Workers exposed to 700 ppm acetone for 3 hours/day for 7-15 years showed inflammation of the respiratory tract, stomach and duodenum, attacks of giddiness and loss of strength. Exposure to acetone may enhance liver toxicity of chlorinated solvents.

TOXICITY	IRRITATION
acetone	
Dermal (rabbit) LD50: 20000 mg/kg	Eye (human): 500 ppm - irritant
Inhalation (human) TCLo: 500 ppm	Eye (rabbit): 20mg/24hr -moderate
Inhalation (man) TCLo: 10 mg/m3/6 hr	Eye (rabbit): 3.95 mg - SEVERE
Inhalation (man) TCLo: 12000 ppm/4 hr	Skin (rabbit): 500 mg/24hr - mild
Inhalation (rat) LC50: 50100 mg/m3/8 hr	Skin (rabbit):395mg (open) - mild
Oral (man) TDLo: 2857 mg/kg	
Oral (rat) LD50: 5800 mg/kg	
Not Available	Not Available

* Value obtained from manufacturer's msds
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

ACETONE

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
for acetone:

Acute Toxicity:	Not Applicable	**Carcinogenicity:**	Not Applicable
Skin Irritation/Corrosion:	Not Applicable	**Reproductivity:**	Not Applicable
Serious Eye Damage/Irritation:	Eye Irritation Category 2A	**STOT - Single Exposure:**	STOT - SE (Narcosis) Category 3
Respiratory or Skin sensitisation:	Not Applicable	**STOT - Repeated Exposure:**	Not Applicable
Mutagenicity:	Not Applicable	**Aspiration Hazard:**	Aspiration Hazard Category 1

CMR STATUS

SECTION 12 Ecological information

Toxicity

Not Available

Ingredient	Endpoint	Test Duration	Effect	Value	Species	BCF
ACETONE	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

For ketones:
Ketones, unless they are alpha, beta--unsaturated ketones, can be considered as narcosis or baseline toxicity compounds
Hydrolysis may also involve the addition of water to ketones to yield ketals under mild acid conditions. However, this addition of water is thermodynamically favorable only for low molecular weight ketones.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

Bioaccumulative potential

Ingredient	Bioaccumulation
Not Available	Not Available

Mobility in soil

Ingredient	Mobility
Not Available	Not Available

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal:

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:

SECTION 14 Transport information

Labels Required:

Marine Pollutant: NO

Land transport (DOT)

UN number	1090	**Packing group**	II
UN proper shipping name	Acetone	**Environmental hazard**	No relevant data
Transport hazard class(es)	Class: 3	**Special precautions for user**	Hazard Label: 3 Special provisions: IB2, T4, TP1

Air transport (ICAO-IATA / DGR)

UN number	1090	**Packing group**	II
UN proper shipping name	Acetone	**Environmental hazard**	No relevant data
Transport hazard class(es)	ICAO/IATA Class: 3 ICAO / IATA Subrisk: ERG Code: 3H	**Special precautions for user**	Special provisions: Cargo Only Packing Instructions: 364 Cargo Only Maximum Qty / Pack: 60 L Passenger and Cargo Packing Instructions: 353 Passenger and Cargo Maximum Qty / Pack: 5 L Passenger and Cargo Limited Quantity Packing Instructions: Y341 Passenger and Cargo Maximum Qty / Pack: 1 L

Sea transport (IMDG-Code / GGVSee)

UN number	1090	**Packing group**	II
UN proper shipping name	ACETONE (ACETONE SOLUTIONS)	**Environmental hazard**	No relevant data
Transport hazard class(es)	IMDG Class: 3 IMDG Subrisk:	**Special precautions for user**	EMS Number: F-E,S-D Special provisions: Limited Quantities: 1 L

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category	Residual Concentration - Outside Special Area (% w/w)	Residual Concentration
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances	acetone	Not Available	Not Available	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

acetone(67-64-1) is found on the following regulatory lists

"US CAA (Clean Air Act) - HON Rule - Organic HAPs (Hazardous Air Pollutants)","US - North Dakota Air Pollutants - Guideline Concentrations","US CAA (Clean Air Act) - HON Rule - Synthetic Organic Chemical Manufacturing Industry Chemicals","US -Texas Air Monitoring Comparison Values for Evaluating VOCs","US Spacecraft Water Exposure Guidelines for Selected Waterborne Contaminants SWEGs","International Fragrance Association (IFRA) Survey: Transparency List","FEMA Generally Recognized as Safe (GRAS) Flavoring Substances 23 - Examples of FEMA GRAS Substances with Non-Flavor Functions","US - New Jersey Right to Know Hazardous Substances (English)","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US FDA Cumulative Estimated Daily Intakes (CEDIs) and Acceptable Daily Intakes (ADIs)","US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of Adhesives - Adhesives","US EPA Voluntary Children's Chemical Evaluation Program (VCCEP)","US FDA CFSAN Food Additives Status List","US FDA Everything Added to Food in the United States (EAFUS)","US - Rhode Island Hazardous Substance List","US - Massachusetts Oil & Hazardous Material List","US - Pennsylvania - Hazardous Substance List","US EPA National Priorities List - Superfund Chemical Data Matrix (SCDM) - Hazard Ranking System - Hazardous Substance Benchmarks","Sigma-AldrichTransport Information","FisherTransport Information","US - Connecticut Hazardous Air Pollutants","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes","IMO IBC Code Chapter 18: List of products to which the Code does not apply","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US - CAA (Clean Air Act) - Reactivity Factors for VOCs in Aerosol Coatings","US California - Aerosol Coating Product Emissions - Maximum Incremental Reactivity (MIR) Values","GESAMP/EHS Composite List - GESAMP Hazard Profiles","US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals","US FDA Indirect Food Additives - Substances for use as Components of Coatings - Resinous and polymeric coatings for polyolefin films 21CFR 175-320","IOFI Global Reference List of Chemically Defined Substances","US - Delaware Pollutant Discharge Requirements - Reportable Quantities","US EPA Master

Testing List - Index I Chemicals Listed","US ATSDR Priority List of Hazardous Substances","US - Florida Essential Chemicals","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants","US - Oregon Permissible Exposure Limits (Z-1)","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US - Hawaii Air Contaminant Limits","US - Alaska Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Michigan Exposure Limits for Air Contaminants","US - New York List of Hazardous Substances","US ACGIH Threshold Limit Values (TLV) - Notice of Intended Changes","US ACGIH Threshold Limit Values (TLV)","US NTP (National Toxicology Program) - Management Status Report","US - Minnesota Hazardous Substance List","US TSCA Section 4/12 (b) - Sunset Date/Status","US EPA Integrated Risk Information System (IRIS)","US - Massachusetts - Right To Know Listed Chemicals","United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments","US - California - 22 CCR - Hazardous Wastes and Hazardous Materials - Appendix X","US - California 22 CCR - Toxic Wastes or Toxic Substances","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Inorganic and Organic Constituents","US RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards","US - Washington Discarded Chemical Products List - "U" Chemical Products","US RCRA (Resource Conservation & Recovery Act) - Appendix IX to Part 264 Ground-Water Monitoring List 1","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes","US EPA Acute Exposure Guideline Levels (AEGLs) - Interim","US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)","US DOE Temporary Emergency Exposure Limits (TEELs)","US - California Permissible Exposure Limits for Chemical Contaminants","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US EPA High Production Volume Program Chemical List","OECD List of High Production Volume (HPV) Chemicals","US - Minnesota Permissible Exposure Limits (PELs)","US TSCA Section 4 - Chemicals Subject to Testing Consent Orders","US - Idaho - Limits for Air Contaminants","US NIOSH Recommended Exposure Limits (RELs)","US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US EPA Carcinogens Listing","Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (English)","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","International Maritime Dangerous Goods Requirements (IMDG Code)","US Department of Transportation (DOT), Hazardous Material Table","US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide","International Air Transport Association (IATA) Dangerous Goods Regulations","US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number","US - Maine Chemicals of Concern List","IMO IBC Code Chapter 17: Summary of minimum requirements","US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either","US - Massachusetts Toxics Use Reduction Act (TURA) listed chemicals","United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control (Red List) - Table II","US Drug Enforcement Administration (DEA) Concentration Limits for Chemical Mixtures","US - Connecticut - Regulations Concerning the Designation of Controlled Drugs - Volatile substances","United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II","US EPA National Priorities List - Superfund Chemical Data Matrix (SCDM) - Hazard Ranking System - Hazardous Substance Factor Values","OSPAR National List of Candidates for Substitution – Norway"

SECTION 16 Other information

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.